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1 On missile simulations under interrupted guidance conditions 92%
Naim A. Kheir , Donald W. Sutherlin
Proceedings of the 11th conference on Winter simulation - Volume 1 December 1979

Several guidance laws have been proposed in the past for defense systems. Applications vary from tactical missiles (with different ranges) to target motion analysis (TMA) in naval combat control systems. Guidance techniques are typically classified as either classical or modern with the emphasis on modern being placed on techniques derived from optimal control. The motivation behind this paper is to consider the important applications where, an interceptor missile tracks on radar energy tha ...

2 Modeling the initialization process of a space-launched kinetic energy weapon 88%
William A. Laidig , Harold L. Pastrick
Proceedings of the 18th conference on Winter simulation December 1986

A six degree-of-freedom simulation modeling an SDI space-based kinetic energy weapon is examined to analyze the models which represent the interceptor component initialization scheme. The initialization scheme consists of the first downlink of target information from the radar platform to the launch platform, the handing down of launch platform initial parameters to the interceptor, the predicted impact point algorithm and launcher training, and the interceptor on-board Kalman filter and ta ...

3 Military applications: Case study in modeling and simulation validation methodology 85%
Scott D. Simpkins , Eugene P. Paulo , Lyn R. Whitaker
Proceedings of the 33nd conference on Winter simulation December 2001

The military develops simulations to analyze nearly every aspect of defense. How accurate are these simulations and to what extent do they produce dependable results? Most guidance available to DoD analysts provides broad recommendations geared towards management and coordination of the validation processes. Here, we focus on practical validation from the analyst's perspective in the form of a case study. The platform used is the theater missile defense (TMD) aspects of Extended Air Defense Simu ...

4 Real time information processing II: Automatic error recovery in the Nike-Zeus guidance computer 85%



G. A. Champine , G. M. Griffith
Proceedings of the 1962 ACM national conference on Digest of technical papers September 1962

A REAL-TIME SYSTEM cannot, by definition, afford the shock of errors to disrupt its reaction to the real events relating to the system. This presentation will show how the complete recovery from transient errors can be accomplished and how some types of catastrophic (solid) errors can be ignored with a minimum of shock to the system. The system to be described is one developed for the Nike-Zeus guidance computer system The Nike-Zeus Target Intercept Computer (TIC ...

5 A successful example of a layered-architecture based embedded development with Ada 83 for standard-missile control 83%



Kelly L. Spicer
ACM SIGAda Ada Letters December 2000
Volume XX Issue 4

A need for a standard understandable software architecture that can be reused from project to project has long been recognized. This paper describes the software architecture used for the Standard-Missile-3 (SM-3), Stage-3 development program. The architecture was defined based on hierarchical principles with the goal of providing a general solution for the architecture-level design for embedded systems. An architecture-need statement is first presented listing the attributes of the needed archi ...

6 Application downloading 82%



Robert Balzer , Alvin Cooperband , Martin Feather , Philip London , David Wile
Proceedings of the 5th international conference on Software engineering March 1981

The purpose of our research is to investigate the feasibility of this methodology for distributed application development by examining possible approaches to carrying out such developments. In particular, our emphasis lies in transformation technology, wherein user-invoked source-to-source transformations are applied to the partitioned system for the purpose of optimizing the transactions required to effect the distributed behavior. In this way, the application downloading system need only ...

7 Flight test analysis of missile control systems 82%



Mark Domaszewicz
Proceedings of the 14th design automation conference January 1977

Generalized missile flight test analysis is discussed, emphasizing postflight techniques utilizing control system and airframe models driven by telemetry signals. Examples illustrate the quantitative aspects.

8 Full Technical Papers: Environment modification in a simulated human- 80%

robot interaction task:: experimentation and analysis
Robert St. Amant , David B. Christian
Proceedings of the 8th international conference on Intelligent user interfaces January 2003

This paper describes a novel approach to human-robot interaction, in which a user modifies a robot's environment to constrain its actions, rather than programming its controller. An HRI simulation of a maze navigation task is presented. An empirical evaluation shows that for this task, users prefer an environment modification strategy rather than a programming strategy as the difficulty of the task increases. Further, user alternation between the two types of strategy follows a clear pattern. A ...

9 Information leakage from optical emanations 80%
Joe Loughry , David A. Umphress
ACM Transactions on Information and System Security (TISSEC) August 2002 Volume 5 Issue 3

A previously unknown form of compromising emanations has been discovered. LED status indicators on data communication equipment, under certain conditions, are shown to carry a modulated optical signal that is significantly correlated with information being processed by the device. Physical access is not required; the attacker gains access to all data going through the device, including plaintext in the case of data encryption systems. Experiments show that it is possible to intercept data under ...

10 Military applications: JWARS output analysis 80%
H. Ric Blacksten , James W. Jones , Michael L. Poumade , Haywood S. Osborne , George F. Stone
Proceedings of the 33nd conference on Winter simulation December 2001

The Joint Warfare System (JWARS) is being equipped with a growing set of tools for microanalysis of single replications and for macro-analysis across multiple replications. These include tools embedded in the JWARS HCI (human-computer interface) to provide graphical and textual reports for immediate review, tools to capture campaign results data in a database for later analysis, and post-processing tools for processing such data into reports to support the decision maker.

11 Electronic commerce: a half-empty glass? 80%
Sasa Dekleva
Communications of the AIS June 2000

12 Using a large projection screen as an alternative to head-mounted displays for virtual environments 80%
Emilee Patrick , Dennis Cosgrove , Aleksandra Slavkovic , Jennifer Ann Rode , Thom Verratti , Greg Chiselko
Proceedings of the SIGCHI conference on Human factors in computing systems April 2000

Head-mounted displays for virtual environments facilitate an immersive experience that seems more real than an experience provided by a desk-top monitor [18]; however, the cost of head-mounted displays can prohibit their use. An empirical study was conducted investigating differences in spatial knowledge learned for a virtual environment presented in three viewing conditions: head-mounted display, large projection screen, and desk-top monitor. Participants in each condition were asked to repr ...

13 An analysis of the resources used in the SAFEGUARD system software development 80%

W. E. Stephenson

Proceedings of the 2nd international conference on Software engineering October 1976

The SAFEGUARD System represents the development of one of the largest, most complex software systems ever undertaken. Various types of software were developed, including real time applications, support, and hardware installation and maintenance. Two million instructions were developed at a cost of approximately five thousand staff years of effort. The objective of this paper is to document the staff resources utilized in this development. The actual development rates for the different types ...

14 An architecture for flexible, evolvable process-driven user-guidance environments 80%

Timothy J. Sliski , Matthew P. Billmers , Lori A. Clarke , Leon J. Osterweil

ACM SIGSOFT Software Engineering Notes , Proceedings of the 8th European software engineering conference held jointly with 9th ACM SIGSOFT international symposium on Foundations of software engineering September 2001 Volume 26 Issue 5

Complex toolsets can be difficult to use. User interfaces can help by guiding users through the alternative choices that might be possible at any given time, but this tends to lock users into the fixed interaction models dictated by the user-interface designers. Alternatively, we propose an approach where the tool utilization model is specified by a process, written in a process definition langauge. Our approach incorporates a user-interface specification that describes how the user-interface is ...

15 Internet abuse in the workplace: Monitoring for pornography and sexual harassment 80%

Raymond R. Panko , Hazel Glenn Beh

Communications of the ACM January 2002 Volume 45 Issue 1

The legal basis for workplace surveillance when dealing with two particular Internet abuses.

16 Crime and punishment in cyberspace: dealing with law enforcement and the courts 80%

Harvey Axlerod , Daniel R. Jay

Proceedings of the 27th annual ACM SIGUCCS conference on User services: Mile high expectations November 1999

17 A process-oriented methodology for assessing and improving software trustworthiness 80%

Edward Amoroso , Carol Taylor , John Watson , Jonathan Weiss

Proceedings of the 2nd ACM Conference on Computer and communications security November 1994

A high-level, technical summary of the Trusted Software Methodology (TSM) is provided in this paper. The trust principles and trust classes that comprise the TSM are presented and several engineering investigations and case studies surrounding the TSM are outlined. Appendices are included that highlight important areas of the TSM.

18 OOPSLA onward! track: Acceptability-oriented computing 77%

Martin Rinard

ACM SIGPLAN Notices December 2003

Volume 38 Issue 12

We discuss a new approach to the construction of software systems. Instead of attempting to build a system that is as free of errors as possible, the designer instead identifies key properties that the execution must satisfy to be acceptable to its users. Together, these properties define the *acceptability envelope* of the system: the region that it must stay within to remain acceptable. The developer then augments the system with a layered set of components, each of which enforces one of ...

19 The development of the General Purpose Simulation System (GPSS) 77%

Geoffrey Gordon

The first ACM SIGPLAN conference on History of programming languages March 1975

Volume 10 , 10 , 17 Issue 2 , 2 , 4

The General Purpose Simulation System (GPSS) is a programming system designed for the simulation of discrete systems. These are systems that can be modeled as a series of state changes that occur instantaneously, usually over a period of time. Complexities in their analysis arise because there are many elements in the system, and there is competition for limited system resources. The simulation technique uses numerical computation methods to follow the system elements through their changes ...

20 LegionFS: a secure and scalable file system supporting cross-domain high-performance applications 77%

Brian S. White , Michael Walker , Marty Humphrey , Andrew S. Grimshaw

Proceedings of the 2001 ACM/IEEE conference on Supercomputing (CDROM) November 2001

Realizing that current file systems can not cope with the diverse requirements of wide-area collaborations, researchers have developed data access facilities to meet their needs. Recent work has focused on comprehensive data access architectures. In order to fulfill the evolving requirements in this environment, we suggest a more fully-integrated architecture built upon the fundamental tenets of naming, security, scalability, extensibility, and adaptability. These form the underpinning of the Le ...

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